MAR 21 1922

THE JOURNAL OF PHILOSOPHY

VOL. XIX. NO. 6: MARCH 16, 1922

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PUBLISHED FORTNIGHTLY

THE JOURNAL OF PHILOSOPHY

All communications to the Editors should be addressed to PROFESSOR FREDERICK J. E. WOODBRIDGE, or PROFESSOR WENDELL T. BUSH, Columbia University, New York City.

Subscriptions and advertisements should be sent to THE JOURNAL OF PHILOSOPHY Sub-Station 84, New York City. The annual subscription price (twenty-six numbers) is $4.00 and the charge for single numbers is 20 cents. Advertising rates will be forwarded on application.

The Journal of Philosophy is owned and published by Frederick J. E. Woodbridge and Wendell T. Bush, at Lancaster, Pa.

Entered as second class matter, March 18, 1921, at the Post Office at Lancaster, Pa. under Act of Congress of March 3, 1879.

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Editadas por la: CASA VACCARO-Avenida de Mayo 638-Buenos Aires

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Vol. XIX, No. 6. March 16, 1922

THE JOURNAL OF PHILOSOPHY

DEMOCRACY AND MORALS

IN an article by Cohen that appeared in the *New Republic*, March 17, 1920, and in the article by Sheldon in this JOURNAL, June 6, 1921, certain misrepresentations of Dewey's conception of democracy are so persistently ascribed to Dewey as to raise the question whether Cohen, Sheldon and others are really criticizing the thing to which alone Dewey applies that term, namely, *moral democracy*. Since the Revolution it has been popularly assumed—*i.e.*, by those who do not reflect critically—that democracy means liberty, in the sense of the absence of law and social control; fraternity, in the sense of the absence of ranks and titles; and equality in the sense of equal control exercised by all alike over the material and spiritual resources of society. The readers of this JOURNAL surely do not require proof that these "ideals," taken separately, are unnatural and, taken together, are mutually incompatible. Liberty, so conceived, is incompatible with equality as defined; and since men differ by nature in taste and capacity, fraternity as conceived by the revolutionists can never be anything but an affectation. The rank of a man is indeed but the guinea's stamp, and the man's the gold; but the immortal Burns knew better than most that men differ in metal and that merely stamping them does not always make guineas.

It is difficult for any student of life to enter sympathetically and intelligently into the viewpoint and method of another, but progress in the discussion of philosophical problems depends upon our making the effort. The signers of this paper accordingly venture to say that the key to Dewey's use of the term democracy is liberty, rather than equality, but not the liberty of the revolutionists, not liberty in the merely negative sense of the absence of restraint and control. Liberty means the absence of arbitrary restraint, of unjust control: liberty is opportunity to do right: but the moral meaning of the word is, simply, opportunity for each and all to beat their music out, to live the best life they are capable of, to make the best contribution to the material and spiritual resources of society they can. When one considers what an unformed mass of possibilities each child is as it comes into the world, the applications of this realistic conception of liberty are many and clear. All the activities of science, for example, and all the social institutions that stimulate

and encourage them, are included in this conception of moral democracy. In the words of President Lowell, "Is it or is it not desirable that men in the community should yield as much intellectual output as possible? If it is, how is it undemocratic in men any more than in cows? Do not let us be deceived. Let us remember that after all the greatest asset of a community is not its mines, or its soil, but its men; and that it is for the interest of the whole community that every man should be developed to the utmost point to which he can be developed." By moral democracy, Dewey means a community in which each member finds heroic stimulation and encouragement to be and do his best. "The end, the right and only right end, of man, lies in the fullest and freest realization of powers in their appropriate objects. The good consists of friendship, family and political relations, economic utilization of mechanical resources, science, art, in all their complex and variegated forms and elements. There is no separate and rival moral good; no separate, empty and rival 'good will'" (Dewey in Dewey and Tuft's *Ethics*). "Harmony, reinforcement and expansion are the signs of a true or moral satisfaction. What is the good which while good in direct enjoyment also brings with it richer and fuller life?" Richer and fuller life includes pure science, art, worship and contemplation, the development and enjoyment of wealth, the making and administration of law, and other enterprises. This is a circular definition, of course; for this philosophy is founded in the notion of inherent value, namely in the notion of the inherent value of the experience of value. Contemplation is accordingly either good, bad or indifferent; to say that this philosophy has no place for contemplation is a misreading of it. All political activities are tested by this question: Do they tend to stimulate and develop the capacities of individuals in ways that render them available for the social good?

The good, according to this philosopher, consists of self-conserving and self-promoting activity, *i.e.*, of activity that in its results tends to reinforce and expand itself; and the similarity of this conception to a possible interpretation of the Kantian maxim is obvious. However, this abstract formula in its sweeping generality is practically useless: it gives little or no help to anyone confronted with an actual moral issue. This consideration leads to the conclusion that the real value of an act is unique, that each concrete moral situation has its own good; and this means that moral values are immediate and concrete, not abstract and conceptual. It does not mean that the good is idiosyncratic or fanciful. The good of each moral situation is as universal as an oak tree, as real as the first president of the United States.

In a moral democracy, conflicts of claim occur naturally and in-

evitably, and where they occur this ideal means that the parties concerned refer their claims to a common good and coöperate in achieving that. That Dewey recognizes the function of government in settling such conflicts is evident in page after page of his ethical discussions. Thus, he remarks that no other such instrument as the courts with their juries was ever devised for mediating social order and progress. Again, every right, civil or political, carries with it a corresponding duty and the only fundamental anarchy is the laying claim to rights without acknowledging corresponding duties. The enforcement of duties through law and its administration is abundantly provided for in this theory of society. That Dewey believes the acquisition and ownership of private property to be a moral good, no student of his ethics can question. Like most modern writers on politics he regards public judgment as a most important sanction of law, but he recognizes the usefulness and necessity of force intelligently applied.

In the light of these teachings of Dewey, so familiar that apologies are in order for reciting them, what is to be said of Cohen's statement that Dewey has deliberately chosen between the gospel of mastery over nature and mastery over self and rejected the latter? Cohen states that according to Dewey all ideas are and ought to be "instruments for reforming the world," that Dewey uses the word practical to mean tending to reform the *cosmic scenery* of human life. According to Dewey, however, the *human self* is a part of nature; a human community is as much a natural phenomenon as a community of beavers. Dewey holds that the particular part of nature that today most needs scientific treatment leading to "mastery" over it is the part that never yet has received such treatment, namely, the human community and especially the human self. He reiterates exactly the opposite of the doctrine that Cohen ascribes to him. He enforces the necessity of applying the organa of scientific intelligence to *human* nature in order that the manifold problems of politics, economics, preventive medicine, international society, *etc., etc.,* can be solved through effective self-direction. It is to the end of human self-mastery that Dewey teaches "reconstruction in philosophy." The Baconian slogan, Knowledge is Power, as interpreted by Dewey, means that before man can hope to master the social conditions (the "scenery" of Cohen) of human life, he must take the pains to study and know them adequately. As the present writers understand *Reconstruction in Philosophy,* that is the particular reconstruction the author of this book is talking about.

Cohen and Sheldon insist that Dewey teaches a gospel of equal development for all. Sheldon writes, in his discussion of Dewey's late book: "Equal development is undesirable; it would indeed be

fatal to progress. It would render society as monotonous as the desert; it would do away with the beautiful economy of the division of labor, with individuality, with unique achievement. The social democratic heaven of equal development would reduce personality to nothingness''—as if all this had any bearing on Dewey's philosophy! ''We do not wish to make men equal through and through; we do not wish the ordinary man to be *capable* of doing the work of the expert; equality should pertain only to certain elementary necessities of life'' (italics added). To the present writers this social philosophy contrasts violently with that of Dewey and Lowell; but it is impossible for us to understand how anyone can ascribe the dogma of equal development for all to Dewey. In his books on education he warns against the standardization of school children. The individual for Dewey has a duty to develop to the utmost his particular bent; but since it is good to grow competitively, handicaps should be removed. Unless distinction is competitively gained, both the individual and the community suffer.

Dewey writes that ''regard for the happiness of others means regard for those conditions and objects which permit others freely to exercise their own powers from their own initiative, reflection and choice.'' Perhaps this doctrine is what Cohen and Sheldon have in mind as the doctrine of equal development for all. In Dewey's thought the socially available capacities of each should find stimulation and heroic encouragement in the ''conditions and objects'' that make up his social and physical environment, and he has in mind the brilliantly endowed just as much as the slow and dull. Those who have heard Dewey in the lecture room are amazed to learn that he wishes ''the best endowed to put off their progress until the least endowed have come up to their level.'' On the contrary, he has both advocated and practised special individual training for the best endowed as well as special training for the mentally retarded.

The misreading of Dewey on the part of Cohen and Sheldon is due to a failure to understand what he means by *moral* democracy. What he teaches is not equality of possessions either material or spiritual, but equality of opportunity for each to make the best contribution to the material and spiritual life of mankind that he is capable of. Uniqueness of personal achievement is precisely the thing that Dewey does believe in, teach, and practise. That these two writers should ascribe to him exactly the opposite doctrine, that they should say he teaches a levelling process in possessions both material and spiritual, must strike every thorough reader of Dewey as strange indeed. Democracy in Dewey's conception is perfectly compatible with the meteoric achievement of a Shakspeare or a Newton: it is not incompatible with the mysticism of St. Francis or

Luther: it is not incompatible with the achievements of those modern captains of industry who have contributed enormously to the wealth of society or with their enormous rewards for doing so. The democracy he teaches is fundamentally ethical. Democracy in the sense of equal *amounts* of control over the spiritual and material resources of society, democracy in the sense of mob-rule, democracy as a levelling process, democracy in any sense that is a menace to spiritual values or to unique personal achievement, is foreign to his thought. Dewey is trying to forge an instrument that can be used effectively in the solution of personal and social problems, the objective being a community in which each man shall find encouragement to be contentedly and effectively himself.

Sheldon and Cohen both find fault with Dewey for not stating just what conditions and circumstances will environ us in that society, for not stating just what customs, laws and institutions are supremely just, beneficent and efficient. If anyone only knew! Surely the writers of these articles do not exact omniscience of the ethicist! Or demand that he teach some particular economic doctrine! Desires, inventions and changing circumstances condition in detail the organization of the community from day to day: the conflicts, competitions and triumphs of men help to determine it: and intelligence can not anticipate these in detail. "Democracy," says a writer in the *Atlantic,* "is a gamble on the reasonableness of human nature," but its method of achieving results is, within limits set by the concept of democracy itself, competitive. If human beings are essentially moral beings, as we assume they are, we must believe that all customs and institutions ought to be educative in their effects on human lives, that wealth and property ought to be subordinated to personality in our scale of values, and that every man who can ought to use his intelligence reverently and scientifically to forge a moral future out of the given present. To this end, philosophy can reasonably be expected to furnish an adequate methodology. Democracy exists only where communities daily conquer it anew, and it is part of its working *credo* that the world evolves through that effort.

This we believe to be part of Dewey's meaning, and we find it antagonistic to nothing in civilization that we habitually regard as precious. It *is* antagonistic to the belief that, before the determination of individual powers and individual distinction by competitive behavior, "some men are born horses while others are born with saddles to ride them." It affirms that no one should be prostituted to the status of a mere tool of another's will; for the exhortation of Kant is the acme of good sense, "Treat *humanity,* whether in thyself or another, always as an end, never as a means." In *Reconstruction in Philosophy,* an elementary presentation, Dewey emphasizes—

perhaps he overemphasizes, if measured by the standard of a complete and symmetrical system of philosophy—the instrumental theory of knowledge; but this means at most that those who study his teachings will do well to read his logical discussions in conjunction with his moral, educational and political philosophy. Whether he would subscribe to the statement, we do not know, but some of his writings suggest to us the doctrine that the inherent values to which concepts are instrumental are ultimately *inter al.* moral values.

It is not so much Dewey's philosophy as the facts of nature that negate the idea of identical development for all and the idea of equal participation in control over social resources. These facts of nature are canvassed by Dewey in various writings, and his theory squares with them. Pure science, art, worship and play are from his standpoint normal activities of human beings, human functions that certain customs of modern life tend to pervert or suppress. We hire priests to do our praying for us, professional singers to do our praising, ball teams and actors to do our playing, and scientists to do our thinking; meanwhile, we devote ourselves to a mad scramble for ability to buy things, or for a maximum of economic control, and wonder at the poverty and barrenness of all our lives. Is it "dangerous" to call attention to the fact that the spiritual enterprise of reconstructing and mastering the self is not an enterprise entirely different from that of understanding and controlling "the cosmic scenery"? Sheldon sees fit to warn his readers because Dewey has been studied and quoted by malcontents. The implications of the warning are obvious to all who cherish the wisdom of Amos and Socrates, and a solution of the question of the method of determining the dangerous or safe quality of moral ideas can not be reached in a summary fashion. The way of Dewey is to appeal to the process of history and the long-run confirmation of ideas by consequences. In his social philosophy Sheldon appears to favor medieval realism and the logic of formal authority and the Index.

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DR. A. N. WHITEHEAD'S SCIENTIFIC REALISM

"AN -ism," it has been well said, "is by its inmost being always in opposition," and the conditions which have governed the development of current realism have undoubtedly given it, for good or evil, a markedly protestant character; but the question whether the defects of this general attitude outweigh its merits must here be dismissed with the remark that not the least hostile influence oppos-

ing the new tendency has been the subjectivist aspect—whether frankly such or masked as "idealist"—of contemporary science. It serves no purpose, again, to discuss the reasons for this state of things; the fact must just be accepted. But this suffices to give to any exception from the general rule an unusual degree of importance; when therefore a mathematician and physicist essays "the basis of a natural philosophy which is the necessary presupposition of a recognized speculative physics"[1]—reorganized, that is, in accordance with recent developments—when he approaches his subject as an out and out realist, preluding his theory by an emphatic protest against subjectivism, the course of his investigation at once assumes the highest degree of interest.

Mark first of all the uncompromising emphasis of Dr. Whitehead's protest. "There is now reigning in philosophy and in science an apathetic acquiescence in the conclusion that no coherent account can be given of nature as disclosed in sense-awareness without dragging in its relations to mind. The result has been disastrous both to science and to philosophy."[2] Even if philosophy is less apathetic than Dr. Whitehead supposes, still this is sufficiently provocative; it raises most of the questions at issue at the moment. What, *e.g.*, is nature? Nature, for Dr. Whitehead, is what "we observe in perception through the senses; something which is not thought and which is self-contained for thought." Nature is "independent of thought" in the sense that it "can be thought of as a closed system whose mutual relations do not require the expression of the fact that they are thought about" (p. 3). In saying this Dr. Whitehead is fully aware that his position is not, metaphysically, final. But he is not aiming at "metaphysical doctrine"; all he desires is so to delimit the content of Nature that that content can be investigated and systematized without confusing the inquiry by any references to mind, which, whatever else it is, is not, primarily at least, nature. He posits no metaphysical "disjunction of nature and mind" (p. 4), but accepts their intimate relation and union; he merely wishes reflectively to extend the unreflective attitude of everyday experience, which puts "things" on one side and "mind" on the other, to scientific thought in general.[3]

Nor can it be objected that such a procedure, when it does not ignore the issues, simply begs the question. Problems remain in plenty; how, *e.g.*, "factors" become differentiated from "fact" on the one hand and from "entities" on the other (p. 13); the relation,

[1] *The Concept of Nature*, by A. N. Whitehead, p. vii.

[2] *Ibid.*, p. 27.

[3] P. 29: "adopting our immediate instinctive attitude towards perceptual knowledge."

again, between sense-awareness and thought (p. 14); the relative logical priority of fact and factors; and many another. The point here is that these questions must be assigned their proper position; their discussion must not be constantly introduced into the investigation of Nature, as an "illegitimate importation into the philosophy of natural Science" (p. 28)—as in short one of those metaphysical red herrings which disport themselves in the ocean of thought. Certainly epistemology is in one aspect a natural science on precisely the same footing, *e.g.*, as physiology; but I think that Dr. Whitehead's treatment fully justifies his conclusions, despite any philosophic comments which may quite justifiably be made on them; and it is then the realism of his developed position which appears to me as important as it is unusual.

It is not, in the first place, a noümenal realism; both "real" substratum and "phenomenal" attributes are dispensed with, as depending on "a distinction which is no distinction at all" (p. 16); and with these, again, "primary" and "secondary" qualities[4] (p. 27); the philosophy of science then becomes "the philosophy of the thing perceived. Everything perceived is in nature. We may not pick and choose. The red glow of sunset should be as much part of nature as are molecules and electric waves. It is for natural philosophy to analyze how these elements of nature are connected, refusing to countenance any theory of psychic additions to the object known in perception" (pp. 28, 29). There are not, in brief, two natures, one "apprehended in awareness," and the other "the cause of awareness"; "there is but one nature, the nature which is before us in perceptual knowledge" (p. 40); and this "one nature," finally, is itself not merely apparent, as contrasted, *i.e.*, with "conceptual formulæ of calculation" such as molecules and ether (p. 45).

Dr. Whitehead's adoption of such a definite standpoint, enforced by the arguments set forth in the first two chapters of his book, undoubtedly constitutes a weighty confirmation of the main contentions of realism, doubly valuable and encouraging as coming from an independent and (primarily) non-philosophic quarter. It marks, it is to be hoped, a turning point in the course of discussion. Science, hitherto a powerful, even if passive, ally of subjectivist ontology, promises to transfer her support and allegiance to the opposite camp.[5] For Dr. Whitehead is by no means alone in his views, although he has given them more precise and systematic form than

[4] It may be of interest to point out that before Locke, to whom Dr. Whitehead seems to assign this distinction, it had been endorsed by two great scientists—Boyle and Galileo.

[5] Dr. Whitehead's psychology, as very briefly outlined on p. 188, seems to be, however, unnecessarily subjectivist. I can not help thinking that his whole position would be improved by the extension of realism to this aspect of the subject.

any of his collaborators. The investigators of radio-activity and its developments are prepared to accord to electrons, atoms, and molecules, with their mass properties and spatial configurations, a reality that is continuous and truly consubstantial with that of the macroscopic objects of every-day experience.[6] Realism of this type, again, appears to me to accord with Platonic and Hegelian idealism, so long as it does not explicitly question those presuppositions in virtue of which, as realism, it exists. But these Dr. Whitehead, from his scientific standpoint, is entitled to ignore; they lie, as he contends, outside his province, and to force them into prominence only confuses the issue; and confining myself in the main to the same point of view—"endeavoring to exhibit the type of relations which hold between the entities we perceive as in nature" (p. 45)—I should like to consider his results. It is peculiarly difficult, however, for those who are principally interested in philosophy to appreciate the precise character of Dr. Whitehead's aim. He is concerned with the known content of Nature, with its adequate description and analysis; so that considerations of genesis, whether psychological or epistemological, as also of logical priority, either do not arise at all or enter into the discussion only indirectly and remotely; and unless this is constantly borne in mind his work can not be properly appreciated.

1. There appears to be a fundamental difficulty at the outset, in the explication given on pp. 13–15. "There are three components in our knowledge of nature, fact, factors, and entities. Fact is the undifferentiated terminus of sense-awareness; factors are termini, differentiated as elements of fact." Next, "the immediate fact"—undifferentiated, that is—"is the whole occurrence of nature as an event present for sense-awareness, and essentially passing. The ultimate fact (undifferentiated), for sense-awareness is an event. This whole event is discriminated into partial events." Thus, beginning from nature, we have two parallel divisions of one and the same total content, (*a*) as "fact" into "factors" and (*b*) as "event" into "partial events"; and since both factors and events derive from the same original totality—since all the factors make up the fact which is again the whole event made up by events—then it would seem that events and factors must be somehow equivalent to each other; factors, *i.e.*, must be events, and events, factors. But this is not the case; for there are "other factors in nature which are not events."[7] But if this is true, then it would seem to follow either (*a*) that the whole of events is not really a whole, because it omits some factors;

[6] *Cf. Nature,* Nov. 6, 1919, p. 230.

[7] *Cf.* p. 124—" other factors of nature which do not share in the passage of events."

or (*b*) the whole is not an event, because it contains factors which are not events. Both alternatives materially affect Dr. Whitehead's theory of time and space, because these are "abstractions from events." [8]

The obscurity on this point is increased when these factors which are not events become later on defined as "objects"; for some objects at least are only intellectual abstractions. "Objects for our knowledge may be merely logical abstractions . . . the object . . . is a mere abstract concept . . . an abstract relation, although it is there in nature" (p. 126). Obviously we have travelled a long way from sense-awareness and its content; and I recur to the subject later on in connection with "moments."

A somewhat similar ambiguity marks the more special treatment of time in Chap. III. Again we find (p. 49), "in the first place there is posited a general fact; something is going on; there is an occurrence for definition." At first sight this seems to accord with the preceding statement already considered; we have a totality which is an event, and which may be further distinguished either into events or into factors; but the fact which was previously defined as the undifferentiated terminus of sense-awareness, here comprises two "sets of entities, entities perceived in their own individuality and other entities apprehended as relata." The first are then "discerned," and constitute "the field directly perceived"; the others are "discernible" and are in relation to the discerned—directly perceived—field; and "this complete general fact is the discernible and comprises the discerned." How then can "fact," or "complete general fact," be undifferentiated? There are two alternatives: (*a*) it falls apart into the two mutually exclusive divisions of discernible and discerned; or (*b*) it is discernible and includes (comprises) the discerned, but if so, it can only be discernible relatively to something discerned. Both alternatives therefore imply differentiation. "Fact," *i.e.*, has lost its primary undifferentiated character, as is further shown by its constituents now being "relata in definite relations to some definite entities in the discerned field." Thus the primitive absence of differentiation has given place to definiteness of relation.[9]

2. But let us accept this distinction between discernible and

[8] *Cf.* p. 13—"in the course of analysis space and time should appear." It is important to notice Dr. Whitehead's attitude on this point as compared with Professor Alexander's theory of space and time. For him "Space-Time is the stuff out of which all existents are made. Existents are complexes of Space-Time" (*Proc. Arist. Soc.*, Vol. XVII, p. 417, and *Space, Time and Deity*). For Dr. Whitehead, on the other hand, "space and time spring from a common root, and the ultimate fact of experience is a space-time fact" (p. 132).

[9] "Discernible" again has two senses: a wider on p. 50 ("complete general fact"), and a narrower on p. 53 ("general present fact").

discerned. The next important point is Dr. Whitehead's exposition of the connection between Nature and sense-awareness. He has carefully worked out the relations between sense-awareness, mind and thought; and if it were possible to do so I should refrain from any further discussion; the subject pertains, as Dr. Whitehead contends, to mind rather than to Nature.

But his position here has so important a bearing on his philosophy of Nature that some comment is unavoidable. He seems to me to have followed that perilous tendency which (as a reaction against subjective idealism) attends all realism—that is to attach undue importance to sense-awareness, as such. He tends to hypostatize sense-awareness, to isolate it overmuch from mind operating as a whole, somewhat as faculty psychology distinguished between will and thought and feeling. Consider, *e.g.*, the assertion (p. 14) "the immediate fact for awareness is the whole occurrence of nature."[10] Obviously this can not be taken literally; no one can be sensibly aware of, or even perceive, the whole of Nature. Given the conditions, Nature may be discernible or perceivable or "awarable";[11] and then molecules, electrons and electric waves are "parts of nature" (p. 29). They would appear therefore to be "natural entities"; but on the other hand "entities are factors," and "factors are termini of sense-awareness," which "discloses factors which are the entities for thought"; further, the relations "between natural entities are themselves natural entities—factors—there for sense-awareness" (pp. 12–14). This is sufficiently definite;[12] but plainly in two directions—with regard to Nature in its entirety as in its minutest constituents—the two terms, sense-awareness and perception, bear the widest possible meaning; for in both aspects Nature actually becomes known through sense-awareness supplemented by conception, inference and calculation; but in both aspects, again, Nature is real; for "scientific laws are statements about entities in nature; molecules and electrons are factors in nature" (pp. 45, 46).

But when Dr. Whitehead undertakes a more systematic analysis of Nature, results vitally different are obtained as to the "entities posited for knowledge in sense-awareness." In Chap. III. we find that what may be called the unit factor or initial datum of these natural entities is a complex "event—a place through a

[10] *Cf.* also, " the philosophy of science is the philosophy of the thing perceived. Everything perceived is in nature. Nature is that which we observe in perception through the senses " (pp. 28, 29, 30).

[11] *Cf.* p. 52, " signified events include events in the past as well as the future "; an event being " a place through a period of time."

[12] *Ibid.*, " the complete general fact which is all nature now present as disclosed in sense-awareness."

period of time''—a complex, *i.e.*, within which space, time, and other entities may be discriminated. The totality of simultaneous events constitutes another fundamental datum, a ''duration, a complex of partial events''; and both events and durations possess, essentially, ''temporal thickness''—''a duration is a concrete slab of nature, an essential factor disclosed in sense-awareness; not a mere abstract stretch of time.'' It is, in short, a longer or briefer process of nature just as it happens in time—filling up time as it were.

Contrasted with this is the ''moment,'' as the content of ''all nature at an instant,'' with ''no temporal extension'' or thickness; and then it is essential to the whole of Dr. Whitehead's developed theory that while durations (including events), being ''directly yielded to knowledge by sense-awareness,'' are definite natural entities and ''have all the reality that nature has,'' the moment on the other hand ''is not itself a natural event; in truth there is no nature at an instant''; it is a nonentity; Dr. Whitehead, in short, adopts what may be called a quantum theory of temporal nature.[13]

Now on what is this fundamental contrast founded? It is based, consistently with Dr. Whitehead's acceptance of sense-awareness as the criterion of natural content, on the evidence afforded by that type of consciousness. ''There is no such thing as nature at an instant posited by sense-awareness. What sense-awareness delivers over for knowledge is nature through a period. Accordingly nature at an instant is not itself a real entity''; it is at best ''a very useful concept.''

This course of argument seems to raise two serious difficulties. In the first place, even if we accept the content of sense-awareness as our criterion, the question of the real existence of moments is determined by precisely the same method as is that of the real existence of electrons and molecules; that is, by a process of inference or reasoning.[14] This process, no doubt, must begin from the real data of sense-awareness; but it is impossible to maintain, in either case, that the truth of the conclusion can be determined by sense-awareness as such, no matter how wide a meaning be given to this term. But Dr. Whitehead regards molecules and electrons as real existent factors in nature; moments, on the other hand, are *not* natural entities. And his ground for this denial of reality is not that it is irrational or inconceivable, but simply that it is not a deliverance of sense-awareness—''there is no such thing posited by sense-awareness.'' But exactly the same may be said of electrons

[13] It may elucidate Dr. Whitehead's position to refer to Lotze's distinction between empty time as '' a creation of our intellect '' and '' the succession belonging to (the operation of things) itself, which is the most proper nature of the real.'' *Metaphysic*, I, pp. 350, 354.

[14] The exact logical character of this process is here immaterial.

and molecules. Sense-awareness combined with one course of reasoning gives us the idea of moments; these Dr. Whitehead regards as unreal, ultimately because sense-awareness, delivering nature through a period, does not posit them. Sense-awareness again, combined with another course of reasoning similar in character though differing in details, yields the idea of electrons; but these are real, although sense-awareness (purely as such) plainly does not posit these either. Thus the merely negative verdict of awareness is endorsed in one case, but repudiated in the other.

But as I have already pointed out, Dr. Whitehead admits the existence of natural factors—"there in nature"—which though "not posited by sense-awareness may be known to the intellect—not disclosed in sense-awareness but known by logical inference as necessarily in being" (pp. 125, 126). These entities may be of fundamental importance; *e.g.*, "identity of quality between congruent segments is generally of this character"; and the theory of congruence occupies the whole of Chap. VI. Thus Dr. Whitehead accepts the general principle that logical inference may contribute to the determination of the content of nature; so that it appears quite illegitimate to rule out the existence of moments simply on the ground that they are not posited in sense-awareness.

I am not of course arguing that moments have real existence, nor am I resorting to any metaphysical theory to decide the question; I merely suggest that Dr. Whitehead's arguments, as they stand, are insufficient to establish the nonentity of moments. And this leads to the second difficulty attending his position; for it is by no means so certain as he assumes it to be that sense-awareness does actually posit events or durations having temporal thickness or persistence. Again I do not deny the existence, within the content of sense-awareness, of durations in Dr. Whitehead's special sense; but there are weighty considerations which he has ignored which make it impossible to accept this durational character as pertaining to nature itself merely on the evidence of sense-awareness.

For it is possible that the durational aspect of this content is partially or even completely deceptive, and arises from the conditions determining consciousness; conditions which are of course in no sense metaphysical but purely natural, as Dr. Whitehead himself points out on p. 107. I do not assert that this durational character *is* deceptive, but only that this possibility is not absolutely excluded by Dr. Whitehead's theory; so that duration may be an added quality conferred by sense-awareness itself[15] upon its content even while that content is at the same time a natural reality (or a nature) wholly non-durational. It is true that Dr. White-

[15] Not, be it noted, by any other (ideal or conceptual) type of consciousness.

head refuses, on what are, I think, good grounds, "to countenance any theory of psychic additions to the object known in perception" (p. 29). But this does not exclude the possibility—I suggest nothing more—of awareness or observation conferring its own durational character[16] upon a durationless nature: and the same applies to the remarks on p. 187. That the duration does not wholly pertain to Nature is a fact of elementary psychology; but it is further by no means inconceivable that a completely non-durational nature may give rise by perseveration and after-imagery within sense-awareness to a durational content. Were we to assume indeed that electrons were perceivable, then their enormous velocities and infinitesimal dimensions would result in something closely approaching if not identical with this state of things.[17]

These considerations in no way alter the problem of natural philosophy. That is still, in Dr. Whitehead's words, "to discuss the relations *inter se* of things known abstracted from the bare fact that they are known" (p. 30). But knowledge must not be wholly identified with sense-awareness; rather must the latter be criticized in the light of fuller knowledge in order to ascertain what distinctions, if any, obtain between its special content and Nature itself. Dr. Whitehead, however, prevents this being done by anticipation; for the two conditions which he assumes[18] for durations preclude in advance any possibility of the reality of moments. "Nature," in short, "is nothing else than the deliverance of sense-awareness" (p. 185).

And fundamentally difficult though it undoubtedly is to regard an event as a sequence or sum or group of instantaneous moments, still Dr. Whitehead's later theory of "objects" seems to leave us no other alternative. An event, as we have seen, has (essentially) "temporal thickness"; and it also (as a whole) "passes." Still this in itself does not, I think, prevent us from thinking of an event as containing within itself constituents which, although they possess the slightest possible temporal thickness, and are therefore not instantaneous, still do not themselves "pass." There does not seem to me to be anything illogical about this possibility; Dr. Whitehead, however, excludes it by definition. For any element in nature which does not pass is an object; and an object is not an event; the characteristics of the two are mutually exclusive, in spite of their insep-

[16] In fact Dr. Whitehead points out the "passage of sense-awareness and of thought"; *i.e.* of sense-awareness as an activity—"a procedure of mind"—not as a content or terminus. But here again his distinction between passage and duration seems quite arbitrary, or even to have a metaphysical basis! (Pp. 66–73.)

[17] *Cf.* the express train illustration, p. 109.

[18] P. 60; that it is an assumption is obvious.

arable inter-connection (pp. 143, 144, 169). Now blue is one object; a coat is another and an electron is a third; and I think it is undeniable that all these have temporal thickness; by which (with Dr. Whitehead) I do not mean "a particular second at a definite date" (p. 149) but rather the temporal raw material given in awareness out of which dates and seconds are obtained, it matters not how. Thus objects, as such, have temporal thickness.[19] Any constituent of an event therefore which has any temporal thickness, no matter how slight, and which does not pass, is not an event, but an object; so that the only possible ultimate events proper must be instantaneous. As I have said already, Dr. Whitehead seems to me to avoid this conclusion only by the prior assumption of properties of duration which exclude it in advance (p. 60). Still we may in a certain sense speak of "an object at an instant" (p. 161); what then distinguishes this from an instantaneous event? Plainly the fact that in obtaining temporal thickness it does not pass; or in other words that the event, to be an event, must retain its passage even while it assumes temporal thickness. To say that this reduces the event-particle or the moment to an abstraction is no valid objection, for "to be an abstraction . . . means that its existence is only one factor of a more concrete element of nature" (p. 171).

The exact meaning of the passage however is somewhat uncertain. "Each duration happens and passes. The process of nature can also be termed the passage of nature" (p. 54). This seems to mean that events come into being and pass away, which would constitute their uniqueness; objects, on the other hand, do not pass. The idea certainly appears to imply activity; and on p. 185 passage is given as an alternative for activity. This however would imply that objects are never active. At the same time "the event is what it is, because the object is what it is; each object is in some sense ingredient throughout nature. The ingression of every electron into nature modifies to some extent the character of every event" (pp. 144, 145, 159). It is obviously difficult therefore, particularly if electrons are eternal, to regard objects as essentially inactive; so that this equivalence between passage and activity is not easy to comprehend.

4. A few remarks in conclusion on the distinctive standpoints of science and philosophy with regard to space and time may not be superfluous. Science regards these entities as essentially measured (or at least measurable) systems which together constitute the space-time manifold. This means that the results of measurement are fully as important as that which is measured, perhaps more important;

[19] This seems to be supported by each object being ingredient—*i.e.*, active, operative, influential—throughout nature (pp. 145, 159). A musical tune, again, is also an object.

in other words, the different time- and space-systems are as material to thought as time and space themselves. Philosophy however takes a somewhat profounder view; for it time and space are in their own nature more significant than the scientific systems; somewhat as the monetary system of his own country is of primary interest to a banker, while an economist is more concerned with currency as an element in universal exchange. And now that the space-time manifold has attained such prominence, it is well to remember that it is no mysterious entity additional to time and space themselves, as though it were something wholly different in its nature within which these disappear or dissolve. Any such view would be to repeat the error so often made in dealing with time and space by erecting them into independent realities. The manifold is but the coexistence or unity of space and time, which coexist within reality in their own characters, like nitrogen and oxygen in air, not compounded into a third wholly different substance like oxygen and hydrogen in water.

Regarded in this light, there is one subject of essential importance—the uniformity of time and space throughout the universe, as distinct, *i.e.*, from any uniformity of time and space systems. As to the latter, there can be no question; observers in different situations must employ separate though interrelated systems. We may some day obtain both a common language and a general currency; but it is impossible for a universal time and space system ever to be constructed and employed; the very conditions of physical reality forbid it. But this still leaves open the question of the uniformity of time and space; the latter, *e.g.*, has been described as bent or warped or condensed in the vicinity of matter. Are these and other similar statements metaphorical or literal? Mathematical devices or descriptions of reality? Dr. Whitehead, being naturally concerned with systems, leaves the subject in some obscurity, in spite of his repudiation of Einstein's own interpretation (p. 165). "What a being under the one set of circumstances means by space will be different from that meant by a being under the other set" (p. 168); so that English and Martian observers will obtain different results from any one Earth land survey. But what is it that thus determines local differences in circumstances? In the end all circumstances resolve themselves into events. "The concrete facts of nature are events; event-particles are the ultimate elements of the manifold" (pp. 167, 173). Why, then, the question becomes, are events for *A* different from events for *B*?[20] Martians employ space natural

[20] Or event-particles; but any truly final explanation must be in terms of the concrete events. It is assumed of course that *A* and *B* both have minds of one and the same general type, otherwise the basis of difference is not, in Dr. Whitehead's sense, natural.

to them—"Martio-centric space in which that planet is fixed. Thus the *q*-space for Mars is quite different from the *p*-space on earth" (pp. 175, 176). This however must not be taken to mean that the Martian *manifold* is necessarily different from ours, for space and time denote only the relative *systems*—"are merely ways of expressing certain truths about the relations between events" (p. 168). If then the manifold itself is uniform, what is the basis of the unavoidable differentiation among the systems? It is scarcely sufficient to fall back on the "creative advance of nature" (p. 178), unless we assume that this advance in itself necessitates a non-uniform manifold,[21] but this of course begs the question. Nor again does uniformity of the manifold necessarily follow from that of the momentary spaces and timeless spaces of p. 194; for these may be no more than mathematical or methodological devices.

But difficulties on points of detail such as those I have mentioned are inevitable; even were they far more serious, still Dr. Whitehead's work constitutes a distinct advance in the discussion of ontology; and if it could be supplemented from the strictly philosophic standpoint, we should be much nearer a lasting and satisfactory realism. There appear to me to be two marked parallel tendencies in current philosophy—one towards absolutism, the other towards realism. But absolutism has for long been misrepresented and therefore misunderstood; it has been presented at once as too subjective and too abstract.[22] I do not see anything which prevents realism from taking its place within a system of absolute idealism fuller and deeper than any yet conceived. *Vestigia nulla retrorsum*, some one will say; but then the absolute is not a cave. Even if it were, we are in it already.

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A BEHAVIORISTIC ACCOUNT OF THE SIGNIFICANT SYMBOL

THE statement I wish to present rests upon the following assumptions, which I can do no more than state: I assume, provisionally, the hypothesis of the physical sciences, that physical objects and the physical universe may be analyzed into a complex of physical corpuscles. I assume that the objects of immediate ex-

[21] As distinct, *i.e.*, from the systems. There must be some distinction, otherwise we should have systems of measurement with nothing to measure; "a measure-system measures something inherent in nature" (p. 196).

[22] "The Absolutism which comes in for rebuke at the hands of pluralist critics is a fiction of their own imagination." Radhakrishnan, *Reign of Religion in Philosophy*, p. 407.

perience exist in relationship to the biologic and social individuals whose environments they make up. This relationship involves on the one hand the selection through the sensitivities and reactions of the living forms of those elements that go to make up the object. On the other hand these objects affect the plants and animals whose natures are responsible for them as objects, *e.g.*, food exists as an immediate experience in its relation to the individuals that eat it. There is no such thing as food apart from such individuals. The selection of the characters which go to make up food is a function of living individuals. The effect of this food upon the living individuals is what we call adaptation of the form to the environment or its opposite. Whatever may be said of a mechanical universe of ultimate physical particles, the lines that are drawn about objects in experience are drawn by the attitudes and conduct of individual living forms. Apart from such an experience involving both the form and its environment, such objects do not exist.

On the other hand these objects exist objectively, as they are in immediate experience. The relation of objects making up an environment to the plants and the animals in no sense renders these objects subjective. What are termed the natures of objects are in the objects, as are their so-called sensuous qualities, but these natures are not in the objects either as external or internal relations, they are of the very essence of the objects, and become relations only in the thought process. The so-called sensuous qualities exist also in the objects, but only in their relations to the sensitive organisms whose environments they form.

The causal effect of the living organisms on their environment in creating objects is as genuine as the effect of the environment upon the living organism. A digestive tract creates food as truly as the advance of a glacial cap wipes out some animals or selects others which can grow warm coats of hair. An animal's sensitiveness to a particular character in an object gives the object in its relation to the animal a peculiar nature. Where there is sensitiveness to two or more different characters of the object, answering to reactions that conflict and thus inhibit each other, the object is in so far analyzed. Thus the width of a stream would be isolated from the other characters of the stream through the inhibition of the animal's tendency to jump over it. In the immediate experience in which the animal organism and its environment are involved, these characters of the objects and the inhibited reactions that answer to them are there or exist, as characters, though as yet they have no significance nor are they located in minds or consciousnesses.

Among objects in the immediate experience of animals are the

different parts of their own organisms, which have different characters from those of other objects—especially hedonic characters, and those of stresses and excitements—but characters not referred to selves until selves arise in experience. They are only accidentally private, *i.e.*, necessarily confined to the experience of single individuals. If—after the fashion of the Siamese Twins—two organisms were so joined that the same organ were connected with the central nervous system of each, each would have the same painful or pleasurable object in experience. A toothache or a pleased palate are objects for a single individual for reasons that are not essentially different from those which make the flame of a match scratched in a room in which there is only one individual an object only for that individual. It is not the exclusion of an object from the experience in which others are involved which renders it subjective; it is rendered subjective by being referred by an individual to his self, when selves have arisen in the development of conduct. Exclusive experiences are peculiarly favorable for such reference, but characteristics of objects for every one may be so referred in mental processes.

Among objects that exist only for separate individuals are so-called images. They are *there*, but are not necessarily *located* in space. They do enter into the structure of things, as notably on the printed page, or in the hardness of a distant object; and in hallucinations they may be spatially located. They are dependent for their existence upon conditions in the organism—especially those of the central nervous system—as are other objects in experience such as mountains and chairs. When referred to the self they become memory images, or those of a creative imagination, but they are not mental or spiritual stuff.

Conduct is the sum of the reactions of living beings to their environments, especially to the objects which their relation to the environment has "cut out of it," to use a Bergsonian phrase. Among these objects are certain which are of peculiar importance to which I wish to refer, viz., other living forms which belong to the same group. The attitudes and early indications of actions of these forms are peculiarly important stimuli, and to extend a Wundtian term may be called "gestures." These other living forms in the group to which the organism belongs may be called social objects and exist as such before selves come into existence. These gestures call out definite, and in all highly organized forms, partially predetermined reactions, such as those of sex, of parenthood, of hostility, and possibly others, such as the so-called herd instincts. In so far as these specialized reactions are present in the nature of individuals, they tend to arise whenever the appropriate stimu-

lus, or gesture calls them out. If an individual uses such a gesture, and he is affected by it as another individual is affected by it, he responds or tends to respond to his own social stimulus, as another individual would respond. A notable instance of this is in the song, or vocal gesture of birds. The vocal gesture is of peculiar importance because it reacts upon the individual who makes it in the same fashion that it reacts upon another, but this is also true in a less degree of those of one's own gestures that he can see or feel.

The self arises in conduct, when the individual becomes a social object in experience to himself. This takes place when the individual assumes the attitude or uses the gesture which another individual would use and responds to it himself, or tends so to respond. It is a development that arises gradually in the life of the infant and presumably arose gradually in the life of the race. It arises in the life of the infant through what is unfortunately called imitation, and finds its expression in the normal play life of young children. In the process the child gradually becomes a social being in his own experience, and he acts toward himself in a manner analogous to that in which he acts toward others. Especially he talks to himself as he talks to others and in keeping up this conversation in the inner forum constitutes the field which is called that of mind. Then those objects and experiences which belong to his own body, those images which belong to his own past, become part of this self.

In the behavior of forms lower than man, we find one individual indicating objects to other forms, though without what we term signification. The hen that pecks at the angleworn is directly though without intention indicating it to the chicks. The animal in a herd that scents danger, in moving away indicates to the other members of the herd the direction of safety and puts them in the attitude of scenting the same danger. The hunting dog points to the hidden bird. The lost lamb that bleats, and the child that cries each points himself out to his mother. All of these gestures, to the intelligent observer, are significant symbols, but they are none of them significant to the forms that make them.

In what does this significance consist in terms of a behavioristic psychology? A summary answer would be that the gesture not only actually brings the stimulus-object into the range of the reactions of other forms, but that the nature of the object is also indicated; especially do we imply in the term significance that the individual who points out indicates the nature to *himself*. But it is not enough that he should indicate this meaning—whatever meaning is—as it exists for himself alone, but that he should indicate that meaning as it exists for the other to whom he is pointing

it out. The widest use of the term implies that he indicates the meaning to any other individual to whom it might be pointed out in the same situation. In so far then as the individual takes the attitude of another toward himself, and in some sense arouses in himself the tendency to the action, which his conduct calls out in the other individual, he will have indicated to himself the meaning of the gesture. This implies a definition of meaning—that it is an indicated reaction which the object may call out. When we find that we have adjusted ourselves to a comprehensive set of reactions toward an object we feel that the meaning of the object is ours. But that the meaning may be ours, it is necessary that we should be able to regard ourselves as taking this attitude of adjustment to response. We must indicate to ourselves not only the object but also the readiness to respond in certain ways to the object, and this indication must be made in the attitude or rôle of the other individual to whom it is pointed out or to whom it may be pointed out. If this is not the case it has not that common property which is involved in significance. It is through the ability to be the other at the same time that he is himself that the symbol becomes significant. The common statement of this is that we have in mind, what we indicate to another that he shall do. In giving directions, we give the direction to ourselves at the same time that we give it to another. We assume also his attitude of response to our requests, as an individual to whom the direction has the same signification in his conduct that it has to ourselves.

But signification is not confined to the particular situation within which an indication is given. It acquires universal meaning. Even if the two are the only ones involved, the form in which it is given is universal—it would have the same meaning to any other who might find himself in the same position. How does this generalization arise? From the behavioristic standpoint it must take place through the individual generalizing himself in his attitude of the other. We are familiar enough with the undertaking, in social and moral instruction to children and to those who are not children. A child acquires the sense of property through taking what may be called the attitude of the generalized other. Those attitudes which all assume in given conditions and over against the same objects, become for him attitudes which every one assumes. In taking the rôle which is common to all, he finds himself speaking to himself and to others with the authority of the group. These attitudes become axiomatic. The generalization is simply the result of the identity of responses. Indeed it is only as he has in some sense amalgamated the attitudes of the different rôles in which he has addressed himself that he acquires the unity

of personality. The "me" that he addresses is constantly varied. It answers to the changing play of impulse, but the group solidarity, especially in its uniform restrictions, gives him the unity of universality. This I take to be the sole source of the universal. It quickly passes the bounds of the specific group. It is the vox populi, vox dei, the "voice of men and of angels." Education and varied experience refine out of it what is provincial, and leave "what is true for all men at all times." From the first, its form is universal, for differences of the different attitudes of others wear their peculiarities away. In the play period, however, before the child has reached that of competitive games—in which he seeks to pit his own acquired self against others—in the play period this process is not fully carried out and the child is as varied as his varying moods; but in the game he sees himself in terms of the group or the gang and speaks with a passion for rules and standards. Its social advantage and even necessity makes this approach to himself imperative. He must see himself as the whole group sees him. This again has passed under the head of passive imitation. But it is not in uniform attitudes that universality appears as a recognized factor in either inner or outer behavior. It is found rightly in thought and thought is the conversation of this generalized other with the self.

The significant symbol is then the gesture, the sign, the word which is addressed to the self when it is addressed to another individual, and is addressed to another, in form to all other individuals, when it is addressed to the self.

Signification has, as we have seen, two references, one to the thing indicated, and the other to the response, to the instance and to the meaning or idea. It denotes and connotes. When the symbol is used for the one, it is a name. When it is used for the other, it is a concept. But it neither denotes nor connotes except, when in form at least, denotation and connotation are addressed both to a self and to others, when it is in a universe of discourse that is oriented with reference to a self. If the gesture simply indicates the object to another, it has no meaning to the individual who makes it, nor does the response which the other individual carries out become a meaning to him, unless he assumes the attitude of having his attention directed by an individual to whom it has a meaning. Then he takes his own response to be the meaning of the indication. Through this sympathetic placing of themselves in each other's rôles, and finding thus in their own experiences the responses of the others, what would otherwise be an unintelligent gesture, acquires just the value which is connoted by signification, both in its specific application and in its universality.

It should be added that in so far as thought—that inner conversation in which objects as stimuli are both separated from and related to their responses—is identified with consciousness, that is in so far as consciousness is identified with awareness, it is the result of this development of the self in experience. The other prevalent signification of consciousness is found simply in the presence of objects in experience. With the eyes shut we can say we are no longer conscious of visual objects. If the condition of the nervous system or certain tracts in it, cancels the relation of individual and his environment, he may be said to lose consciousness or some portion of it; *i.e.*, some objects or all of them pass out of experience for this individual. Of peculiar interest is the disappearance of a painful object, *e.g.*, an aching tooth under a local anesthetic. A general anesthetic shuts out all objects.

As above indicated analysis takes place through the conflict of responses which isolates separate features of the object and both separates them from and relates them to their responses, *i.e.*, their meanings. The response becomes a meaning, when it is indicated by a generalized attitude both to the self and to others. Mind, which is a process within which this analysis and its indications take place, lies in a field of conduct between a specific individual and the environment, in which the individual is able, through the generalized attitude he assumes, to make use of symbolic gestures, *i.e.*, terms, which are significant to all including himself.

While the conflict of reactions takes place within the individual, the analysis takes place in the object. Mind is then a field that is not confined to the individual much less is located in a brain. Significance belongs to things in their relations to individuals. It does not lie in mental processes which are enclosed within individuals.

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BOOK REVIEWS

The Analysis of Mind. BERTRAND RUSSELL. London: George Allen and Unwin. New York: The Macmillan Co. 1921. Pp. 310.

The book deals with that conception of the nature of mind which is involved in regarding physical objects as constructs of appearances. Thus it is in effect the logical sequel to views expressed by the author in his Lowell Lectures, and in it he has given us what is the most complete and balanced statement to date of the results of his philosophic method.

Mr. Russell's central thesis is that all psychical phenomena are built up out of sensations and images, and nothing else. This involves

a departure from his own previous theory "that the essence of everything mental is a certain quite peculiar something called 'consciousness'," and more specifically a revision of his doctrine of knowledge by acquaintance. Moreover since the physical as well as the psychical is a construction of appearances, his most fundamental systematic problem is that of distinguishing between mind and matter. In lecture I (*Recent criticisms of "consciousness"*), and lecture VI (*Introspection*), he shows that this must not be thought of as a substantial dualism. His general position is a monism whose ideal is "that fundamental science . . . the true metaphysic, in which mind and matter alike are seen to be constructed out of a neutral stuff" (p. 287). This ultimate stuff, which presumably consists of the multiplicity of appearances, is the common subject-matter both of physics and psychology. But the latter science deals with it by means of causal laws which have two special characteristics. In the first place, all psychical phenomena are said to possess "subjectivity." To this term a very special meaning attaches, which may be made clear as follows. Every particular of the kind considered by physics may on the one hand be regarded as a member of a group constituting a thing, as explained in Mr. Russell's Lowell Lectures and elsewhere, as well as in the present work; on the other hand it may be a member of a group constituting a perspective, a group of which in turn make up a "biography." The most significant purely logical mark of a biography is that it possesses a linear time-order, that is, it is a group of entities which have direct time-relations (simultaneous with, before, after) with respect to any one of themselves, as opposed to the time order of the physical universe. The "local time" of the theory of relativity occurs in biographies. And it is such a classification, which is also called classification by "passive places," that Mr. Russell understands as the essence of subjectivity. But this is not a complete designation of the nature of psychical phenomena, for many such biographies will have nothing to do with mind. A photographic plate might have a biography in this sense. An additional determining factor is needed for the specification of mind, and this is provided by "mnemic causation." This means that the nature of our experience of any event is not wholly caused by the immediate, present occurrence of that event, but also by its past occurrences in our experience. "This characteristic is embodied in the saying 'the burnt child dreads the fire'. The burn may have left no visible traces, yet it modifies the reaction of the child in the presence of the fire" (p. 77). While Mr. Russell agrees that it is probable that such phenomena can be explained by regarding the results of experience as being embodied in modifications of the brain and nerves, he points out that this is a theory only, and prefers to

operate with the bare formulation of the observed facts. Thus "the two most essential characteristics of the causal laws which would naturally be called psychological are *subjectivity* and *mnemic causation*" (p. 307).

The bulk of the book is taken up with the detailed elaboration of the theory above outlined in terms in its application to various psychological and epistemological conceptions. A *perception* is the appearance of an object from a place where there is a brain. Such appearances undergo distortion owing to the intervening media of the organic structure, and also stand in the nexus of mnemic causation. *Sensations* are the non-mnemic core of perceptions, and are the elements common to both the mental and physical worlds. *Images* differ from sensations in that their causation is wholly mnemic, that is, they arise from past experience. *Belief*, which is "the central problem in the analysis of mind" (p. 231) is analyzed into content, which is a complex of images and sensations, and a specific feeling called believing, which is "presumably a complex sensation demanding analysis" (p. 251). In terms of belief are defined *memory, expectation,* and *assent,* the differences between them being not an affair of content, but arising out of the three kinds of belief-feeling which may attach to any complex of images. *Imagination* consists of images without belief. The study of belief also leads to a formal theory of *truth and falsehood. Emotions* and *will* are discussed in consonance with the general position of the book, emotions being regarded as serial patterns of sensations and images. *Desire* is treated as being a sort of analogue to force in physics. *Instinct* and *habit* are also considered. The *meaning of words,* and also that of images is explained largely with reference to mnemic causation. In dealing with *general ideas* we are given a very valuable analysis of vagueness and the generic image. The discussion of *introspection* is notable for its penetration and lucidity. In the final lecture there is presented a theory of *consciousness.* An interesting point is the philosophical assimilation of the psychoanalytic method. At the close of the book is an analytic table of contents which is remarkable only for its lack of value.

The whole work, which displays its author's constructive insight and analytic power to the best advantage, is of great methodological interest as a thoroughgoing reconstitution of structural psychology. Mr. Russell rejects behaviorism as an ultimate account of the nature of mind, because it is based on a faulty philosophy of physics, which fails to regard the universe as fundamentally a multiplicity of particulars. Perhaps the weakest spot is the treatment of belief-feelings, which are somewhat dogmatically said to consist of complex sensations, although no attempt is made to analyze these

complexes. This, however, is at the worst an error of omission, and throughout we find an accuracy in defining and a directness in attacking genuine problems not usual in work of this character. The entire discussion will be welcomed, not only as the latest authoritative exposition of a point of view which has become very influential, but also as a highly significant contribution to modern philosophy.

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COLUMBUS, OHIO.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY, July, 1921. *An Experimental Investigation of the Positive After-Image in Audition* (pp. 305–325). HOMER GUY BISHOP.–There is no positive after image of tone similar to the nature of the visual after-image. *The Influence of Color upon Mental and Motor Efficiency* (pp. 326–356): SIDNEY L. PRESSEY.–Experimental evidence suggests that there is a slowing up of mental work under dim light, but hues aside from brightness show no effect. Bibliography. *The Nature of the Affective Judgment in the Method of Paired Comparisons* (pp. 357–369): M. YOKOYAMA.–The method of paired comparisons can no longer be considered as a typical laboratory setting for the study of affections. *A Study in Logical Memory* (pp. 370–403): SARAH D. MACKAY AUSTIN.–After from two to four weeks repetitions of both logical and nonsense material proved of greater value than cumulative repetitions. *In Aid of Introspection* (pp. 404–414): HORACE BIDWELL ENGLISH.–Introspection is approved as a psychological method. Several rules are given. "Any one with a good memory and a sincere desire to improve can learn to introspect in a way which will be of distinct scientific usefulness." *Minor Studies from the Psychological Laboratory of Cornell University. An Experimental Study of Cutaneous Imagery* (pp. 415–420): CATHERINE BRADDOCK.–Cutaneous images come up rarely if ever. *The Integration of Punctiform Cold and Pressure* (pp. 421–424): S. TUNG.–The simultaneous stimulation of pressure and cold spots was felt as wet-cold. *The Hering Color-Blindness Apparatus and the Normal Equation* (pp. 425–428): M. WINFIELD AND C. STRONG.–Variation from the normality in color combination approvals is insufficient evidence for normality and abnormality. *The After-Effect of Seen Movement When the Whole Visual Field is filled by a Moving Stimulus* (pp. 429–441): WELLINGTON A. THALMAN.–The after-effect is observed when the whole visual field is filled by an objective moving stimulus the chief conditioning factor of which is duration. *Book Reviews:* J. B. Pratt, *The religious*

consciousness: a psychological study: E. S. AMES. S. Bernfeld, *Das jüdische Volk und seine Jugend:* S. FELDMAN. *A Note on "Vocality"* (pp. 446–447): GILBERT J. RICH. *Consciousness in the Siamese Twins:* E. G. B.

Dewey, Evelyn. The Dalton Laboratory Plan. New York: E. P. Dutton & Co. 1922. Pp. vii + 173.

Léon, Xavier. Fichte et son Temps. Vol. I. Établissement et Prédication de la Doctrine de la Liberté; Le Vie de Fichte jusqu'au départ d'Iéna (1762–1799). Paris: Armand Colin. 1922. Pp. xvi + 652. 30 fr.

McCall, William A. How to Measure in Education. New York: The Macmillan Co. 1922. Pp. xii + 416.

Moore, Jared Sparks. The Foundations of Psychology. Princeton, N. J.: University Press. 1922. Pp. xix + 239. $3.

Poyer, Georges. Les Problèmes Généraux de l'Héredite psychologique. Paris: Félix Alcan. 1921. Pp. 302. 15 fr.

Reyburn, Hugh A. The Ethical Theory of Hegel: A Study of the Philosophy of Right. Oxford: The Clarendon Press. 1921. Pp. xx + 268.

NOTES AND NEWS

A meeting of the Aristotelian Society was held in London on January 16, Dr. F. C. S. Schiller, President, in the chair. A paper on "Plato's Theory of *εἰκασία*" was presented by Mr. H. J. Paton. In Plato's account of the Line and the Cave in the *Republic* he distinguishes two sub-divisions of opinion (*εἰκασία* or intuition and *πίστις* or belief) and two sub-divisions of knowledge (*διάνοια* or mathematical reasoning and *νόησις* or philosophical reasoning). This must be understood as implying a difference of objects in each of the four sub-divisions, just as the objects of opinion and knowledge are different—the changing individuals as opposed to the unchanging universals. The parallelism or analogy between the objects of the two main divisions and those of the sub-divisions is meant to be taken seriously throughout. In particular the objects of the *εἰκασία* or intuition are the many appearances, whether given in what we call sense or memory or imagination, from which we pass to the objects of *πίστις* or belief—the solid bodies of the ordinary consciousness and of science, things relatively permanent and relatively intelligible in comparison with their many appearances,

although changing and unintelligible in comparison with the really permanent and really intelligible εἴδη or universals. It is a complete error to regard εἰκασία and its objects as of no metaphysical importance, and an understanding of the nature of this section is necessary if we are to grasp Plato's general theory of knowledge. Even Plato's theory that art must be classified under this first cognitive activity of the spirit is in its essence sound in spite of the fact that some of the conclusions which he derived from it were mistaken.

The annual meeting of the Western Division of the American Philosophical Association this year will be held at the University of Nebraska, Lincoln, Nebraska, on Friday and Saturday, April 14 and 15. As usual, members will have opportunity to present papers—not exceeding twenty minutes in length—on any topics of their selection. It is proposed however that one afternoon session be devoted to *Logical Aspects of Critical Realism* with Professor A. W. Moore as leader of the discussion. All who feel especially interested in the recent volume, *Essays in Critical Realism*, or any of its problems, are invited to participate. It has been suggested that the papers of one other session relate to the problem of *The Nature of the Self*, the topic being taken broadly as covering methodological aspects of the *Mind-Body Problem*, especially *Interactionism* as it has recently been presented, and the relations of *Mechanism and Teleology* as pertaining to the nature of the self. Should the papers offered warrant doing so, this suggestion will be followed in arranging the program. A list of references on this subject may be obtained from the Secretary, Professor G. A. Tawney, University of Cincinnati, Cincinnati, Ohio. It is essential that the Secretary be notified of the titles at an early date. Abstracts of all papers to be read should be in his hands not later than April 7, and fifteen to twenty copies of each abstract would be highly desirable for distribution.

A group of scientific men and women from Russia now living in the United States have organized themselves into the "Russian Academic Group." Their first annual meeting was held on January 12. The purpose of the organization is threefold: (1) to study the social, economic and industrial problems involved in the development of Russia; (2) to bring about a closer contact between the scientific and educational institutions of America and Russia; and (3) to help in the reconstruction of the academic life of the Russian universities and to bring relief to their faculties and students.

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Published without fixed dates, each issue one or more researches.

Psychological Index—Princeton, N. J.; Psychological Review Company.
Subscription $1.50. 200 pp. Founded 1895. Edited by Madison Bentley.
An annual bibliography of psychological literature.

Journal of Philosophy—New York; Sub-Station 84.
Subscription $4. 728 pages per volume. Founded 1904.
Bi-weekly. Edited by F. J. E. Woodbridge and Wendell T. Bush.

Archives of Psychology—Sub-Station 84, N. Y.; Archives of Psychology.
Subscription $5. 600 pp. ann. Founded 1906. Ed. by R. S. Woodworth.
Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology and Social Psychology—Boston;
Subscription $5. Richard G. Badger. Edited by Morton Prince.
Bi-monthly. 480 pages annually. Founded 1906. Abnormal and social.

Psychological Clinic—Philadelphia; Psychological Clinic Press.
Subscription $2.50. 288 pages. Ed. by Lightner Witmer. Founded 1907.
Without fixed dates (9 numbers). Orthogenics, psychology, hygiene.

Training School Bulletin—Vineland, N. J.; The Training School.
Subscription $1. 160 pages ann. Ed. by E. R. Johnstone. Founded 1904.
Monthly (10 numbers). Psychology and training of defectives.

Journal of Educational Psychology—Baltimore; Warwick & York.
Subscription $4. 540 pages annually. Founded 1910.
Monthly (9 numbers). Managing Editor, J. Carleton Bell.
(Educational Psychology Monographs. Edited by Guy M. Whipple.
Published separately at varying prices. Same publishers.)

Comparative Psychology Monographs—Baltimore: Williams & Wilkins Co.
Subscription $5. 500 pages per volume. Edited by W. S. Hunter.
Published without fixed dates, each number a single research.

Psychoanalytic Review—Washington, D. C.; 3617 10th St., N. W.
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Quarterly. Founded 1913. Ed. by W. A. White and S. E. Jelliffe.

Journal of Experimental Psychology—Princeton, N. J.
Psychological Review Company. 480 pages annually. Experimental.
Subscription $4.25. Founded 1916. Bi-monthly. Ed. by John B. Watson.

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Quarterly. Edited by G. Stanley Hall and L. R. Geissler.

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